Stefan Schwietzke

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Education (Degree Programs)

8/09 - 12/13 *Doctorate*, **Carnegie Mellon University**, Pittsburgh, PA, USA Degree: Ph.D., Engineering and Public Policy

- Topics: Verification of life cycle greenhouse gas estimates of renewable and fossil energy systems using climate modeling and global-scale atmospheric methane measurements
- Completed coursework includes: decision analysis (e.g., benefit-cost-analysis, linear optimization, Monte-Carlo simulation), climate change economics
- Final grade (QPA): 3.89 (scale to 4.0)

9/02 - 12/08 *Undergraduate and post-graduate education*, **Universität Stuttgart**, Germany

- Degrees: Dipl.-Ing. Technology Management (4 semesters; M.S. equivalent), Pre-diploma Mechanical Engineering (4 semesters; B.S. equivalent)
- Thesis: “Impact of corn stover harvest for bio-energy on soil organic carbon sequestration” (1 semester)
- Grade (Final / Thesis): 1.8 / 1.3 (scale from 1.0 (best) to 4.0)

Education (Other)

7/10 **Vermont Law School**, South Royalton, VT, USA

- Coursework: "Natural Resource and Damage Assessment and Restoration"

10/04 - 4/05 **Université de La Réunion**, St.-Denis, France (DOM)

- Economics and French with Fellowship of the Baden-Württemberg State Foundation, Germany

Professional Experience

5/15 – current *Research Scientist,* **Cooperative Institute for Research in Environmental Sciences (CIRES) / University of Colorado, National Oceanographic and Atmospheric Administration (NOAA) / Global Monitoring Division (GMD)**, Boulder, CO, USA

- Atmospheric modeling of the global methane cycle
- Aircraft measurements and quantification of fugitive hydrocarbon emissions from fossil fuels
- Outreach to journalists and policy makers (e.g., *U.S. Senate Committee on Energy and Natural Resources*)
- Journal reviewer: *Environ. Sci. & Technol.*, *Waste Management*

5/14 – 4/15 *Postdoctoral Research Associate*, **NOAA/GMD**, Boulder, CO, USA

- See above

8/09 - 12/13 *Research Assistant*, **Carnegie Mellon University, Center for Climate and Energy Decision Making**, Pittsburgh, PA, USA

2/09 - 6/09 *Intern Automotive Strategy*, **PricewaterhouseCoopers AG**, Stuttgart, Germany

- Analyzed how shifts in national CO_2 emissions targets, vehicle technologies, car markets, and the global economic crisis questioned traditional business models in the automotive industry

8/07 - 12/08 *Research Assistant*, **Purdue University, Laboratory of Renewable Resources Engineering**, West Lafayette, IN, USA

- Assistant to project director for a study of the *International Energy Agency (IEA)* regarding research gaps of 2nd generation transportation biofuels
- CO_2 emissions analysis of biofuels using corn stover residue

Honors and Awards

5/15 - 4/16 Innovative Research Proposal grant, **Cooperative Institute for Research in Environmental Sciences (CIRES)**

6/14 Editors Choice Award for publication "Global bottom-up fossil fuel fugitive methane and ethane emissions inventory for atmospheric modeling", **American Chemical Society (ACS)**

5/14 – 4/15 Postdoctoral Research Associate Fellowship, **National Research Council (NRC)**

12/12 Finalist **NASA**-sponsored *FameLab* competition for science communication (regional heat)

4/12 - 3/13 Sustainability Fellowship, **ERM Foundation North-America**

2/11 Herbert L. Toor Award for outstanding research paper submitted in the Ph.D. qualifying exam, **Carnegie Mellon University**

8/09 - 9/13 Research Assistant Fellowship, **Carnegie Mellon University**

8/07 - 12/08 Research Assistant Fellowship, **Purdue University**

10/04 - 4/05 Study-abroad fellowship, **Baden-Württemberg State Foundation**

Publications

- Stefan Schwietzke, Owen A. Sherwood, Lori M. P. Bruhwiler, John B. Miller, Giuseppe Etiope, Edward J. Dlugokencky, Sylvia Englund Michel, Victoria A. Arling, Bruce H. Vaughn, James W. C. White, Pieter P. Tans (2016). Upward revision of global fossil fuel methane emissions based on isotopic database. *Nature* 538, 88-91. http://www.nature.com/nature/journal/v538/n7623/full/nature19797.html

- Stefan Schwietzke, Griffin, W. M., Matthews, H. S., Bruhwiler, L. M. P. (2014). Global natural gas fugitive emissions rates constrained by atmospheric methane and ethane. *Environ. Sci. Technol.* 48 (14), 7714–7722. http://pubs.acs.org/doi/abs/10.1021/es501204c

- Stefan Schwietzke, Griffin, W. M., Matthews, H. S., Bruhwiler, L. M. P. (2014). Global bottom-up fossil fuel methane and ethane emissions inventory for atmospheric modeling. *ACS Sustain. Chem. Eng.* 2 (8), 1992–2001. http://pubs.acs.org/doi/abs/10.1021/sc500163h

- Stefan Schwietzke (2013) Atmospheric Impacts of Biofuel and Natural Gas Life Cycle Greenhouse Gas Emissions and Policy Implications. Ph.D. dissertation, Carnegie Mellon University, Pittsburgh, PA. http://repository.cmu.edu/dissertations/299

- Stefan Schwietzke, Griffin, W. M., Matthews, H. S. (2011) Relevance of emissions timing in biofuel greenhouse gases and climate impacts. *Environ. Sci. Technol.* 45 (19), 8197–8203. http://pubs.acs.org/doi/abs/10.1021/es2016236

- Stefan Schwietzke, Kim, Y. Ki, Ximenes, E. et al. (2009) Ethanol Production from Maize, p. 347-364, Chapter 23 (Molecular Genetic Approaches to Maize Improvement). In *Biotechnology in Agriculture and Forestry,* Vol. 63, Springer-Verlag, Berlin.

- Stefan Schwietzke, Ladisch, M., et al. (2008) Gaps in the Research of 2nd Generation Transportation Biofuels, *International Energy Agency*, Bioenergy: T41(2): 2008:01. http://www.ieabioenergy.com/LibItem.aspx?id=5955

- Stefan Schwietzke (2008) Impact of corn stover harvest for bio-energy on soil organic carbon sequestration. Diplomarbeit, Universität Stuttgart